

**WHAT IS CLAIMED IS:**

- 1     1. A soil aerator tine comprising:  
2         a elongated arcuate member having a concave surface and a substantially  
3         complimentary and opposed convex surface, the arcuate member being operable to fracture  
4         soil and form an aeration pocket; and  
5         an aeration tube coupled to the arcuate member at one of said convex surface or said  
6         concave surface, the aeration tube being operable to remove a soil plug as the blade portion  
7         fractures soil and forms an aeration pocket.
  
- 1     2. The device of claim 1, wherein the aeration tube includes a cutting edge
  
- 1     3. The device of claim 1, wherein at least one of the concave and convex surfaces include  
2         an edge adapted to fracture soil.
  
- 1     4. The device of claim 1, wherein the concave surface and the and the convex surface  
2         converge near a tip portion.
  
- 1     5. The device of claim 4, wherein the aeration tube is spaced apart from the tip portion.
  
- 1     6. The device of claim 1, wherein the aeration tube is coupled to the convex surface.
  
- 1     7. The device of claim 6, wherein aeration tube has a central axis that is substantially  
2         parallel to a tangent of the convex surface proximate the aeration tube.
  
- 1     8. The device of claim 1, further comprising a mounting structure positioned at a proximal  
2         portion of the elongated member, the mounting structure being operable to releasably  
3         connect the elongated member to a soil aeration assembly.
  
- 1     9. The device claim 8, wherein the mounting structure is a cavity formed in the proximal  
2         portion of the elongated member, the cavity being receivable onto a mounting element of  
3         a tine-holder member.

1 10. A soil aeration tine, comprising:

2 means for fracturing soil and for drawing the aeration tine into said soil, said means  
3 including a curved elongate member; and

4 means for removing a soil plug, said plug removal means being coupled to the soil  
5 fracturing means.

1 11. The soil aeration tine of claim 10, wherein the plug removal means is operable to cut a  
2 soil plug while the soil fracturing means fractures soil to form an aeration pocket.

1 12. The soil aeration tine of claim 10, wherein the fracturing and drawing means includes  
2 concave and convex edges adapted to fracture soil.

1 13. The soil aeration tine of claim 10, further comprising a mounting means positioned distal  
2 the tip portion.

1 14. The soil aeration tine of claim 13, wherein the mounting means is operable to releasably  
2 connect the aeration tine to a rack.

1 15. A method of forming an aeration pocket, comprising:

2 penetrating a patch of soil with a tip portion of an elongated arcuate aeration tine  
3 having a knife portion and an aeration tube coupled to the knife portion and spaced apart  
4 from the tip portion;

5 fracturing the soil with the knife portion; and

6 removing a soil plug with the aeration tube;

7 whereby a fractured soil pocket is formed, said pocket having a length significantly  
8 greater than the diameter of said soil plug.

1 16. The method of claim 15, wherein the knife portion includes a convex edge and a  
2 complimentary concave edge, the concave and convex edges converging near the tip  
3 portion.

1 17. The method of claim 16, wherein the concave edge comprises a leading edge of the knife  
2 portion as the soil is penetrated.

1 18. The method of claim 15, wherein the step of penetrating with the arcuate tine portion  
2 draws the aeration tine downward into the soil.